

Amendments to the Claims

1. (Currently Amended) A pivoting device comprising:
 - a functional surface portion;
 - a gimbals portion pivotally supporting said functional surface along a first axis by a first pair of torsional hinges;
 - a support member pivotally supporting said gimbals portion by a second pair of torsional hinges along an axis substantially orthogonal to said first axis, said first and second pairs of torsional hinges operating such that said pivoting of said functional surface portion about said first pair of torsional hinges results in movement in a primary direction, and pivoting of said device about said second pair of torsional hinges results in movement substantially orthogonal to said primary direction;
 - at least one first magnet located along said first axis;
 - a first magnetic driver cooperating with said at least one first magnet for causing pivotal movement about said first pair of torsional hinges;
 - a second magnet mounted along said second axis and located adjacent one hinge of said second pair of torsional hinges; and
 - a second magnetic driver cooperating with said second magnet for pivoting said device about said second pair of torsional hinges to provide said orthogonal movement[.];

wherein said at least one first magnet has a diametral charge perpendicular to the axis of rotation and substantially parallel to said functional surface and wherein said first magnetic driver is at least one coil located proximate said one first magnet.

2. (Cancelled)
3. (Currently Amended) The device of claim [2] 1 wherein said at least one first magnet comprises two first magnets, one each located adjacent one each of said first pair of torsional hinges and said at least one coil comprises a pair of coils.
4. (Original) The device of claim 1 wherein said first and second magnetic drivers pivot said device to selected positions.
5. (Original) The device of claim 4 wherein at least one of said first and second pair of torsional hinges have a resonant frequency above about 120 Hz.
6. (Original) The device of claim 1 wherein at least one of said first and second pair of torsional hinges have a resonant frequency of between about 250 Hz and about 1000 Hz.
7. (Original) The device of claim 1 wherein said at least one first magnet has an axial charge and wherein said first magnetic driver is an electromagnet having legs extending to each side of its corresponding magnet.
8. (Original) The device of claim 7 wherein said at least one first magnet comprises two first magnets and said electromagnet is a pair of electromagnets.
9. (Original) The device of claim 1 wherein said functional surface is light grating positioned to intercept a beam of light.

10. (Original) The device of claim 1 wherein said functional surface is a reflective surface positioned to intercept a beam of light.
11. (Original) The device of claim 10 is used as an optical switch in a communication system.
12. (Original) The device of claim 10 wherein at least one of said first and second pair of torsional hinges have a resonant frequency of between about 250 Hz and about 1000 Hz.
13. (Original) The device of claim 12 is used as an optical switch in a communication system.
14. (Original) The device of claim 1 wherein said at least one first magnet is located at the center of said functional surface, and said first magnetic driver is located below said at least one first magnet.

15. (Currently Amended) A pivoting device comprising:
- a functional surface portion;
 - support structure pivotally supporting said functional surface portion along a first axis by a pair of torsional hinges such that said pivoting of said functional surface portion about said pair of torsional hinges results in movement in a first direction;
 - a first magnet located along said first axis;
 - a first magnetic driver cooperating with said at least one first magnet for causing pivotal movement about said pair of torsional hinges[.];

wherein said first magnet has a diametral charge perpendicular to the axis of rotation and substantially parallel to said functional surface and wherein said first magnetic driver is at least one coil located proximate said first magnet.

16. (Cancelled)

17. (Currently Amended) The device of claim [16] 15 wherein said first magnet comprises two first magnets, one each located adjacent one each of said first pair of torsional hinges.

18. (Original) The device of claim 17 wherein said first magnet has an axial charge and wherein said magnetic driver is an electromagnet having legs extending to each side of its corresponding magnet.

19. (Original) The device of claim 15 wherein said first magnetic drive pivots said device to a selected position.

20. (Original) The device of claim 15 wherein said functional surface is a reflective surface positioned to intercept a beam of light.
21. (Original) The device of claim 15 wherein said device has a resonant frequency of between about 250 Hz and about 1000 Hz.
22. (Original) The device of claim 21 wherein said functional surface is a reflective surface positioned to intercept a beam of light.
23. (Original) The device of claim 22 wherein said device is used as an optical switch in a communication system.
24. (Original) The device of claim 15 wherein said support structure comprises a gimbals portion connected to said functional surface along said first axis by said pair of torsional hinges and a support member pivotally supporting said gimbal portion by a second pair of torsional hinges along an axis substantially orthogonal to said first axis, such that said pivoting of said device about said second pair of torsional hinges results in movement substantially orthogonal to said first direction;

two second magnets mounted along said second axis and one each located adjacent each one of said second pair of torsional hinges; and

two second magnetic drivers cooperating with said two second magnets for pivoting said device about said second pair of torsional hinges to provide said orthogonal movement.
25. (Original) The device of claim 24 wherein said device has a resonant frequency above about 120 Hz around said first set of torsional hinges.

26. (Original) The device of claim 25 wherein said second magnetic driver pivots said device to a selected position.
27. (Original) The device of claim 26 wherein said second pair of torsional hinges has a resonant frequency above about 120 Hz.
28. (Original) The device of claim 24 wherein said functional surface is a reflective surface positioned to intercept a beam of light.
29. (Original) The device of claim 28 wherein said device is used as an optical switch.
30. (Original) The device of claim 15 wherein said first magnet is located at the center of said functional surface and said first magnetic driver is located below said first magnet.